

BRIEFING ON LEAD IN PVC

A motion for a resolution supported by the ENVI Committee against the European Commission's proposal to regulate lead in PVC will be subject to a plenary vote this week, on the 12th February.

The European Commission's draft restriction set different standards for virgin and secondary materials. This measure enables great amounts of lead (up to 10 000 tonnes per year¹) to be reintroduced in the EU market through recycled PVC for at least the next 15 years.

Since the 2000 [Green Paper on environmental issues of PVC](#), the Commission is considering the legislative phase-out or other risk reduction measures for lead and legislative instruments to restrict the mechanical recycling of PVC waste containing lead but did not follow the recommendations of the European Parliament, which requested to ban lead as a stabilizer in the EU².

Based on a voluntary agreement, the European PVC industry has today almost entirely phased out lead stabilisers. This phase out took 15 years and imports of lead from PVC articles are still entering the European market. Meanwhile, exposure to leaded PVC continues.

The Commission requested the European Chemicals Agency (ECHA) to draft an Annex XV Restriction Report. The restriction proposed by the Commission would be applicable only 24 months after the entry into force of the Restriction. It also contains two derogations allowing the presence of lead in recycled PVC: one allows the presence of up to 2% by weight of rigid PVC and the other allows up to 1% by weight of flexible PVC, for a substance for which no safe health levels of exposure can be determined.

10 REASONS TO SUPPORT THE RESOLUTION

1. Lead is a very dangerous, “non-threshold” chemical.

The toxicity in PVC plastics is obvious and the descriptions of lead poisoning date back to at least 2 000 BC.

According to the classification provided by companies to ECHA in [REACH registrations](#) this substance may damage fertility or the unborn child, causes damage to organs through prolonged or repeated exposure, is very toxic to aquatic life with long lasting effects, may cause cancer and may cause harm to breast-fed children.

A substantial body of data indicates that lead is likely to be an endocrine disruptor, with effects including delayed puberty/menarche, steroidogenesis, altered and delayed spermatogenesis, decreased fertility, and possible changes to the sex ratio of births³. Lead has effects on nearly every organ system, including cardiovascular, hemopoietic, and renal impacts⁴.

Lead is a “non-threshold” substance: no safe levels of exposure can be determined by scientists. According to ECHA's opinion “No threshold has been scientifically established for the neurotoxic / neurodevelopmental properties of lead” including “for negative impacts on IQ in children”, “even very low doses of lead can result in severe neurobehavioral and neurodevelopmental effects”⁵, particularly as a result of childhood, foetal, or occupational exposure. As with other

¹ Corresponding to 500 000 tonnes of PVC expected to be recycled annually from post-consumer waste, with lead concentrations between 0 and 2%.

² European Parliament resolution of 3 April 2001 on the Commission Green Paper on environmental issues of PVC (OJ C 21 E, 24.1.2002, p. 112)

³ Dyer. (2007.) “Heavy Metals as Endocrine-Disrupting Chemicals.” In *Endocrine-Disrupting Chemicals*, 111–33. Contemporary Endocrinology. Humana Press. doi:10.1007/1-59745-107-X_5.

⁴ HSDB toxicology database: lead compounds, <https://toxnet.nlm.nih.gov/>

⁵ <https://www.who.int/en/news-room/fact-sheets/detail/lead-poisoning-and-health> and <https://echa.europa.eu/es/registry-of-restriction-intentions/-/dislist/details/0b0236e180a40af7>

carcinogens and endocrine disrupters, there is no safe threshold for lead exposure. In fact, there is evidence that lead's impacts on children's neurodevelopment are greatest at the very lowest doses⁶.

In fact, the Restriction proposal does reiterate this and does not propose "safe" thresholds but administrative threshold levels in order to avoid "intentional addition of lead-based stabilisers in the PVC compounding process" and to "ensure continuation of PVC recycling".

The threshold of 0.1 % may seem low, but even such concentration of lead in PVC can cause harm, as acknowledged by ECHA.

2. Leaded PVC waste is hazardous waste

Leaded-PVC waste meets the relevant criteria⁷ to be classified as hazardous due to the amount of hazardous substances it contains (particularly lead compounds). Lead is usually contained in concentrations that would qualify the waste stream as hazardous⁸.

If lead-containing PVC waste was correctly classified as hazardous, a number of important obligations would be triggered (including appropriate labelling and packaging, specific treatment for hazardous waste, etc.). It would require proper decontamination before being later recycled and eventual end-of-life disposal could not be done in 'normal' incinerators or landfilling facilities.

However, the Commission's proposal is based on the incorrect classification of leaded-PVC waste as non-hazardous.

This misclassification of waste may have significant negative health, environmental and economic consequences:

- during the handling and treatment, including recyclability of the waste (e.g. contamination of recycling streams)
- materials that re-enter the economy resulting from the recovery of waste wrongly classified as non-hazardous will result in a wrongly classified non-hazardous product.
- inadequate waste disposal that leads to poor management of risks during waste management (e.g. the non-recycled PVC waste will not be referred as hazardous and will be incinerated in normal incinerators and landfills).

3. Environmental risks are disregarded.

Lead is also harmful to the environment (ecotoxic) as it is very toxic to aquatic life⁹, presents a danger of cumulative effects and persists in the environment (certain lead compounds also accumulate in certain organisms)¹⁰. Lead can kill or injure species being constantly released into the atmosphere or absorbed by different ecosystems.

⁶ Canfield et al (2003). "Intellectual Impairment in Children with Blood Lead Concentrations below 10 µg per Deciliter." *New England Journal of Medicine* 348(16): 1517–26. doi:10.1056/NEJMoa022848.

⁷ That is a 0,3% concentration threshold for lead (classified as reprotoxicant) according to the Commission's [notice on technical guidance on the classification of waste](#), p. 112

⁸ The average concentration of lead compounds is 2.0%, according to a Commission Study to assess the possibility of granting a derogation given to specific types of plastics and rubber waste in the EU waste list, <https://ec.europa.eu/docsroom/documents/36202>, p. 82

⁹ ECHA, Annex XV dossier, https://echa.europa.eu/documents/10162/13641/rest_lead_pvc-axv_report_en.pdf/8d13696c-a60f-5a90-2ff4-5cec8c702f4e, p. 11

¹⁰ WHO, Exposure to lead: a major public health concern, 2019 <https://apps.who.int/iris/bitstream/handle/10665/329953/WHO-CED-PHE-EPE-19.4.7-eng.pdf?ua=1>

Another impact related to PVC and other plastics is the decomposition of these plastics in the environment. Microplastics can be found in different habitats and when absorbed by animals they form a perfect transmission path for transferring pollutants and chemicals into their tissues.

However, **the restriction's risk assessment has not taken into account the environmental impacts of the continuous use of lead in PVC, hence the environmental hazards were not used in the risk characterisation by ECHA, resulting in an underestimation of the overall risk.**

ECHA recognises several times that releases “may be/are underestimated” and that “a comprehensive exposure and risk characterisation for the lead compounds used as PVC stabilisers has not been undertaken and releases of lead from PVC articles are used as a proxy for risk”.

Nevertheless, the European Commission's draft restriction of lead in PVC enables great amounts of lead (up to 10 000 tonnes per year corresponding to at least 500,000 tonnes per year of PVC) to be placed (again) on the market via recovered PVC. In the context of environmental pollution and biodiversity crisis, it is not tolerable to enable such lead contamination in the environment.

4. Landfilling is the most desirable option from a risk perspective

The Commission's proposal did not assess which of landfilling or recycling would reduce releases the most. Although the emissions from landfilling are considerably lower than incineration¹¹, ECHA assumed that landfilling would not be, even temporarily, a waste management option.

Moreover, the landfilling releases are assumed for a completely open landfill, i.e. no impermeable layer at all between the waste and the soils as should be disposed of due to the hazardousness of the PVC waste. However, even with these overestimated releases, it could be assumed that **landfilling is the most desirable option from a risk perspective.**

Further, the Commission wrongly assumes that recycled lead has zero emission. In fact, recycled leaded PVC remains in the use phase, during which it still has appreciable emissions to the environment. Furthermore, the Commission disregards post-recycling emissions: articles derived from recycling will have additional service lives with the accompanying emissions.

Finally, the Commission also dismisses in its assessment that all of this material will ultimately be disposed of through landfilling or incineration. Recycling of leaded PVC increases and postpones, but does not prevent, these emissions as both, incineration and recycling eventually release the same amount of lead when disposed of.

5. PVC recycling is not circular at all

Recycling would require the use of primary PVC to dilute the PVC containing lead. Recycled PVC is not used at a concentration of 100% in the manufacturing of “second-hand PVC” articles but in a concentration oscillating between 40-70% with the remainder primary PVC.

The derogation of recycled PVC contained in the restriction therefore permits the dilution of lead into the next generation of articles made out of PVC, for which emissions from recovered materials in articles have not been taken into account in the risk assessment¹².

As recognised by the Commission in the 2000 [Green Paper on environmental issues of PVC](#), “the recycling of PVC waste containing heavy metals results in a dilution of these substances in a greater quantity of PVC, since it is necessary to add virgin material.”

¹¹ the release factors for landfill vary between 0,004 to 0.16% and for recycling are 0.02%. 0.16% emission factor according to ECHA's Annex XV dossier, https://echa.europa.eu/documents/10162/13641/rest_lead_pvc-axv_report_en.pdf/8d13696c-a60f-5a90-2ff4-5cec8c702f4e, p.18

¹² See RAC and SEAC rapporteurs' comments

The recycling of PVC material containing these heavy metals does not avoid, rather to postpone the final disposal to a later stage and increase overall emissions. These emissions are ignored in the risk assessment performed by ECHA.

The problem is prolonged while relying on the myths of “endless recycling” by and putting legacy substances back in the cycle again and increasing exposure to lead, it is diluting by contaminating recovered materials.

6. The EU objective to transition towards a clean circular economy and non-toxic material cycles cannot be achieved by recovering contaminated materials.

The European Green Deal resolution overwhelmingly supported by the Parliament on January 15th, called on the Commission to “consider measures to address imported products containing substances or components that are banned within the EU, and consider[ed] that these should not be reintroduced on the EU market in consumer products through recycling activities”¹³. But the current restriction proposal is doing exactly this.

Also, to allow higher concentration levels of toxics in recycled materials than new ones, generates consumer distrust and hampers the circular economy.

7. The Commission’s proposal is a competitive disadvantage for EU companies that have phased out lead.

ECHA background document justifies the derogation of recycled PVC as follows “a higher lead restriction limit (of 1% w/w) in specific articles based on rigid and recycled PVC over 15 years, so as to allow recycling to continue serving as a viable waste management practice following the disposal of PVC articles”.

EU producers of PVC have voluntarily phased out lead [although it took 15 years] and are using alternative safer stabilisers. Furthermore, the restriction bypasses EU’s current practices by enabling imported products to contain lead in recycled PVC for another 2 years in order “*to allow use of existing stocks and to ensure that the information can be efficiently communicated within the relevant supply chains.*”

There is a need for coherence and legal clarity from legislators: instead of phasing out lead in PVC from all producers, leaded PVC can still get into the EU market either through imported PVC articles (during 2 years) or recovered PVC (for 15 years).

8. A misleading labelling, luring purchasers into false green claims.

A labelling is proposed, indicating “recovered PVC”, which would, instead of informing purchasers about the presence of a highly hazardous substance, confusing them into believing that they opt for a sustainable material. Instead, the labelling should state “contains hazardous chemicals” to fulfil its purpose of informing about the presence of a hazardous substance regulated under chemicals regulations.

9. Delay of action means sacrificing not only current but also future generations

Instead of tackling the lead in PVC problem and treating this material as hazardous waste today, what the Commission is doing with the recycling derogation is to ignore and delay the unavoidable final disposal. Moreover, given that the main source of leaded PVC comes from imported articles, it is disproportionate to grant imports another 2 years to continue pollution. These delays mean sacrificing not only current but also future generations. This implies an intergenerational justice issue that we cannot tolerate, especially given that avoiding lead in PVC is possible.

10. The scope is narrow and difficult to enforce

As acknowledged by the ECHA committees in the [final opinion](#), “Restriction of any lead present in PVC (regardless of intended function) would contribute to addressing the risks identified in the proposal. In addition, it might not be readily apparent why lead is present in an article, so specifying a particular use might not be helpful from an enforcement perspective (the Forum for enforcement indicated in their advice that the restriction will be simpler to enforce if

¹³ European Parliament, “Green Deal Resolution”, https://www.europarl.europa.eu/doceo/document/RC-9-2020-0040_EN.html, Paragraph 34



enforcement authorities do not have to demonstrate the function of any lead detected in PVC above the relevant concentration limit)".